

# The mysterious Boeing X-37B

By Johan de Villiers

## A Brief History of the X-37B

Built by Boeing's Phantom Works division, the X-37 program was originally started by NASA in 1999 but was transferred to DARPA (Defense Advanced Research Projects Agency) in 2004 when it officially became a classified project.

At a launch weight of just under 5000 kilograms, the X-37B resembles the infamous space shuttle but is a lot smaller with a length of only 8.8 metres and a wingspan of 4.6 metres. For comparison, each space shuttle was 37 m long with a wingspan of 24 m. Stunningly, the top speed of the X-37B is in excess of 28 000 km/h which beats the SR 71 Blackbird by at least a factor of 8!

The solar-powered X-37B space plane launches vertically, just like the space shuttle, with the aid of a rocket and glides back to Earth for a normal runway landing. So far, United Launch Alliance's Atlas V rocket and SpaceX's Falcon 9 rocket have been used to launch the X37B. All missions to date have launched from Cape Canaveral Air Force Base in Florida, with the

Designed to operate at altitudes

of up to 800 km above earth, this unique space plane has completed five clandestine missions to date. The exact payload of each mission remains classified and Air Force generals will only comment on the overall goals of the program.

"The primary objectives of the X-37B are twofold: reusable spacecraft technologies for America's future in space and operating experiments which can be returned to, and examined, on Earth," states an X-37B fact sheet produced by the Air Force.

## A Space Force Weapon?

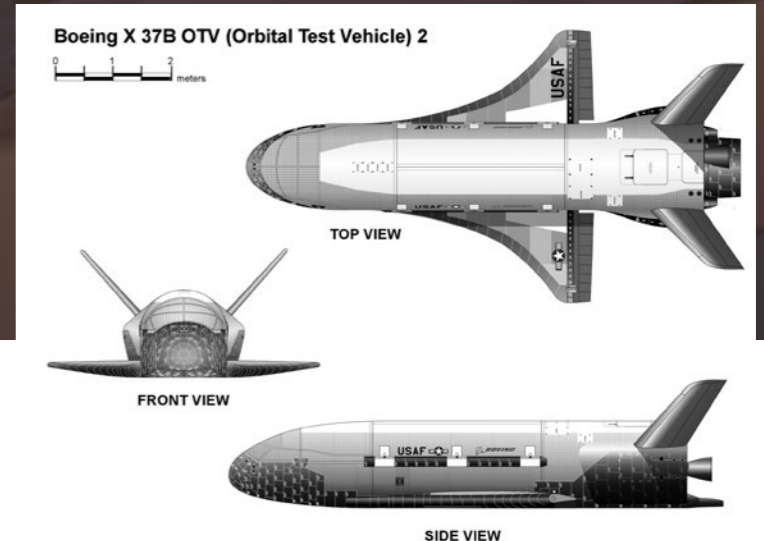
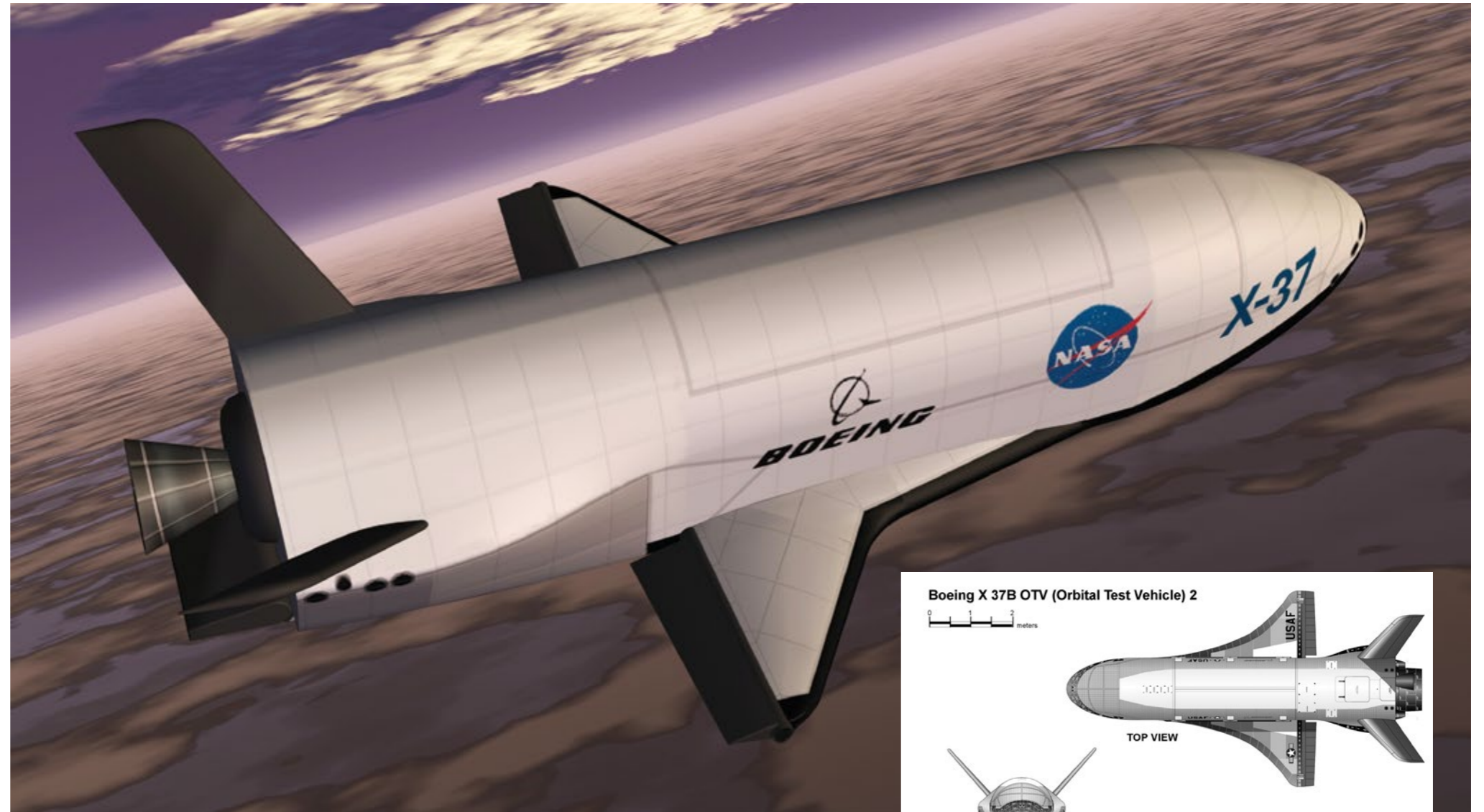
Owing to the secrecy that surrounds the X-37B and the specific payloads that it carries, rumours have spawned that it may carry an anti-satellite weapon of some sort, but experts believe that the plane itself is too small and not manoeuvrable enough for that kind of application. The plane's shuttle-style runway landings would also make it vulnerable for attack by hostile forces which would render it useless as a potential space weapon. Another fact to consider

is that the X-37B is trackable from earth, which would render any stealth capability to sneak up on another nation's satellite, fairly impossible.

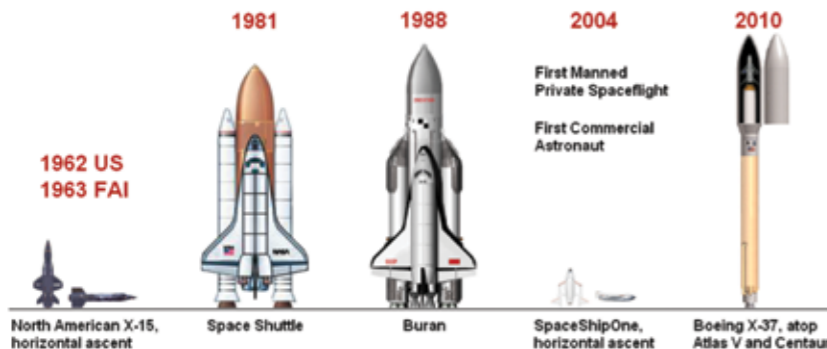
Interestingly enough, should the Air Force allow the X-37B to carry weapons, it would be a direct violation of the 1967 Outer Space Treaty!

With Donald Trump promising a new generation of orbital missile defence systems and actively pushing for a separate military branch for space operations (Space Force), the USA may very well start to challenge the decades-old ban on space-based weapons systems.

Without jeopardizing its scientific missions, the X-37B may legally function as a kind of reusable spy satellite. A more credible explanation would be that it is purely a test bed for new sensors and other next-generation technologies, especially in



## First Spaceplanes



long endurance space environments.

The 6th and latest launch occurred on May 17, 2020 and the stated objectives are to examine the effects of space radiation on seeds as well as an experiment to transform solar power into radio frequency microwave energy. The previous mission duration was in excess of 780 days in space, which set an all-time world record for the longest time aloft for any plane. The five previous X-37B missions clocked up a combined 2,865 days in orbit which is about 7 years and 10 months of off-Earth technology testing.

The latest launch, dubbed USSF-7, was dedicated to the first responders and medical personnel combatting the coronavirus pandemic. A tribute affixed to the side of the Atlas V launch rocket says: "In memory of COVID-19 victims and tribute to all first responders and front-line workers." •